## REMARKS

Reconsideration of the above-identified patent application in view of the amendment above and the remarks below is respectfully requested.

No claims have been canceled in this paper. Claims 1, 18 and 22-25 have been amended in this paper. New claim 26 has been added in this paper. Therefore, claims 1-26 are pending and under active consideration.

Claims 1-17 and 19-21 have been allowed.

Claim 24 stands rejected under 35 U.S.C. 101 "because the claimed invention is directed to non-statutory subject matter." In support of the rejection, the Patent Office states that "[c]laim 24 is nonstatutory because 'the use of' is not a patentable category under 35 U.S.C. § 101."

Applicant respectfully traverses the foregoing rejection. Claim 24, as amended herein, is no longer directed to a "use." Instead, claim 24 is directed to a composition, which is a patentable category under 35 U.S.C. 101.

Accordingly, for at least the above reasons, the foregoing rejection should be withdrawn.

Claims 18 and 22-23 stand rejected under 35 U.S.C. 112, second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." In support of the rejection, the Patent Office states the following:

> Claim 18 is unclear because of the phrase "that a melting curve is generated at the end of the PCR to gather additional data." It is unclear what is intended. Please clarify.
>
> Claim(s) 22 and 23 is/are indefinite because of the use of the word "whereby" instead of "wherein". Please clarify.
>
> Claim 23 is also unclear because of the use of the phrase "e.g. cell lines, blood,...". The use of exemplary claim language makes

> these claims indefinite. See the MPEP at 2173.05(d). It is well established that the description of examples or preferences is properly set forth in the specification rather than the claims. If stated in the claims, examples and preferences lead to confusion over the intended scope of a claim. Ex parte Hall, 83 USPQ 38 (Bd. App. 1949).

Applicant respectfully traverses the foregoing rejection. With respect to claim 18, Applicant has herein added to the claim the inadvertently omitted words "characterized in" after the claim preamble. Applicant respectfully submits that the claim, as amended, is definite. A person of ordinary skill in the art is aware of the fact that, after PCR, a melting curve is generated by slowly heating the amplicon/probe heteroduplex and measuring dramatic changes in fluorescence that result when the probe denatures, i.e., melts, away from the amplicon. Melting curve analysis exploits the fact that even a single mismatch between the labeled probe and the amplicon will significantly reduce the melting temperature.

With respect to claim 22, Applicant has replaced the word "whereby" with the word "wherein."

With respect to claim 23, Applicant has replaced the word "whereby" with the word "wherein" and has deleted the phrase "e.g. cell lines...possible combinations" (said phrase being the subject of new claim 26).

Accordingly, for at least the above reasons, the foregoing rejection should be withdrawn.

Claim 25 stands rejected under 35 U.S.C. 103(a) "as being unpatentable over Gonzalgo et al. (1997) in view of the Stratagene Catalog (1989)." In support of the rejection, the Patent Office states the following:

> Claim 25 is drawn to a kit comprising three components: To begin, the kit is to comprise reagents for the selective deamination of cytosine bases in genomic DNA. Next, the kit is to comprise one or

more primers and labeled nucleotides. Finally, the kit is to comprise a detectable probe.

Gonzalgo et al. teach a method termed methylation-sensitive single nucleotide primer extension (i.e. Ms-SnuPE) which utilizes reagents for the selective deamination of cytosine bases in genomic DNA (i.e. sodium bisulfite). In addition, the method of Gonzalgo et al. utilizes one or more primers (i.e. the primers used in the PCR step), labeled nucleotides (i.e. the $^{32}$P-labeled nucleotides used during the primer extension step) and a detectable probe (i.e. the primer used during the primer extension step). Admittedly, Gonzalgo et al. do not teach a kit comprising the reagents necessary to perform their method. However, as evidenced by the Stratagene Catalog teaching, it was well known at the time of the invention to place the reagents needed to perform a nucleic acid based assay into a kit format. Therefore, absent an unexpected result, it would have been prima facie obvious to the ordinary artisan at the time of the invention to modify the teachings of Gonzalgo et al. with the teachings of the Stratagene Catalog wherein the reagents necessary to perform the method suggested by Gonzalgo et al. are placed into a kit format. The ordinary artisan would have been motivated to make this modification in order to take advantage of the savings and efficiency afforded by kits. Note that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Applicant respectfully traverses the foregoing rejection. The Patent Office appears to be contending (i) that Gonzalgo et al. discloses a method termed methylation-sensitive single nucleotide primer extension (Ms-SNuPE) in which all of the items of the claimed kit are used and (ii) that, in view of the Stratagene Catalog, it would have been obvious at the time of the invention to have assembled these items in the form of a kit. Applicant respectfully disagrees on both accounts.

First, with respect to the issue of whether Gonzalgo et al. discloses the use of all of the items of the claimed kit, Applicant notes that the claimed kit includes, among other things, (a) reagents for

the selective deamination of cytosine bases in genomic DNA, (b) one or more primers and labeled nucleotides for the amplification step, and (c) a detectable probe. By contrast, the Ms-SNuPE technique of Gonzalgo et al. involves (i) treating genomic DNA with sodium bisulfite, (ii) then, performing PCR with primers specific for bisulfite-converted DNA, (iii) then, electrophoresing and isolating the PCR products from agarose gels, (iv) then, incubating the PCR products with appropriate Ms-SNuPE primer(s), buffer, [$^{32}$P]dNTPs and *Taq* polymerase for the primer extension reaction and (v) then, measuring the amount of [$^{32}$P]dNTPs incorporated.

Consequently, whereas the claimed kit includes, among other things, labeled nucleotides for the amplification step, the Gonzalgo Ms-SNuPE technique does not involve the use of labeled nucleotides in the amplification step. In addition, whereas the claimed kit additionally includes a detectable probe, the Gonzalgo Ms-SNuPE technique does not include both labeled nucleotides and a detectable probe. To the extent that the Patent Office is contending that the primer used during the primer extension step is a detectable probe, Applicant respectfully submits that such a reading of the reference is in error.

Second, with respect to the Patent Office's contention that, in view of the Stratagene Catalog, it would have been obvious to have assembled the items in question in kit form, Applicant respectfully disagrees. There is nothing in the Stratagene Catalog that suggests the desirability of assembling the particular items in question in kit form. If one were to take the Patent Office's reasoning to its logical end, it would appear that the Patent Office is contending that the Stratagene Catalog renders obvious any collection of reagents needed to perform a nucleic acid based assay, regardless of the particular reagents involved. Clearly, this cannot be the correct result.

Accordingly, for at least the above reasons, the foregoing rejection should be withdrawn.

In conclusion, it is respectfully submitted that the present application is now in condition for allowance. Prompt and favorable action is earnestly solicited.

If there are any fees due in connection with the filing of this paper that are not accounted for, the Examiner is authorized to charge the fees to our Deposit Account No. 11-1755. If a fee is required for an extension of time under 37 C.F.R. 1.136 that is not accounted for already, such an extension of time is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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By: _____

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 5, 2004.

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